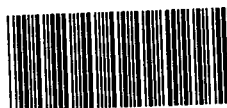




999 WEST VALLEY ROAD
WAYNE, PENNSYLVANIA 19087
215-687-9510



SEMS DocID 2339908

PFE

ORIGINAL
(Red)

CONFIDENTIAL

October 15, 1990
R-585-8-0-11
68-01-7346

Mr. Gregory Ham
U.S. Environmental Protection Agency
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, Pennsylvania 19107

Subject: Final Report
TDD No. F3-9005-33
EPA No. 2718
Valley Forge Army Hospital
Phoenixville, Chester County, Pennsylvania

Dear Mr. Ham:

Submitted herewith is the final Preliminary Assessment report for the subject site. The contents of the report are based on an evaluation of information contained in the site files provided, on the results of a review of regional and local hydrogeologic literature, and on data collected during a field evaluation performed in May 1990. Based on this review, the following is offered for EPA's consideration:

- It is recommended that further action under CERCLA be pursued at the subject site and that the Federal Facilities Department continue its investigation of the site. A rough Hazard Ranking System (HRS) PROscore of 30.52 was obtained for the site. This score is based on available and projected information and is reflective of groundwater targets.
- It is recommended that an investigation of the transformers located on site be performed to determine their integrity. During the site visit, an empty transformer was observed by the FIT next to the electrical substation. The soil in the vicinity of the transformer was stained. In addition, a blueprint of the site (dated 1943) depicts transformer locations throughout the site. The presence of several transformers at the site was verified during the NUS site visit.

Proposed Sampling Plan

The proposed sampling locations include the following:

- A subsurface solid sample should be obtained from two of the sunken areas in the former landfill area.

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Valley Forge Army Hospital Final Preliminary Assessment Report

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- A surface and subsurface solid sample should be obtained in the area where stressed vegetation was observed.
- A waste ash sample should be obtained from the incinerator.
- Aqueous samples should be obtained from the (b) (9) wells.
- An aqueous sample should be obtained from the (b) (9) well.
- An aqueous sample and a sediment sample should be obtained from the intermittent stream off site but near the site boundary.
- An aqueous sample and a sediment sample should be obtained from the perennial tributary to French Creek, upstream and downstream of the tributary's confluence with the intermittent stream.
- A background soil sample should be obtained.

The Valley Forge Army Hospital site comprises more than 150 acres of land in Phoenixville, Chester County, Pennsylvania. The site is entirely surrounded by residential areas.

Since the mid-1970s, ownership deeds for the property have been transferred from the United States General Services Administration by the United States Office of Education and the United States Department of the Interior/National Parks Service. The United States Department of Education transferred deeds to four organizations: the Phoenixville Area School District, the Valley Forge Christian College, the Community Service Providers, and the United States Department of Health and Human Services (the Department of Health and Human Services has since transferred its deed to Community Mental Health Services, Incorporated). The National Parks Service has retained approximately 20 acres of land and has transferred the deed for 44 acres of land to Charlestown Township. These organizations have used the property for educational and recreational purposes. From the mid-1940s until approximately 1974, the United States Army owned the property and operated an Army hospital there. Before the Army's ownership, the site was owned by a local farmer. In the mid-1800s, the site may have been mined for lead and/or silver.

Much recent investigative action has occurred at the site. In 1988, the Phoenixville Area School District became concerned when several sunken areas appeared on the district's playing fields. The area of the depressions had been utilized by the hospital as a disposal area for ash generated in an on-site incinerator. The ash was buried in trenches. The incinerator was reportedly used by the hospital to burn medical wastes.

The school district hired a private consultant to inspect and sample the area of concern in the fall of 1989. Sample results revealed elevated levels of metals, especially lead. In addition to soil contamination at the site, containers of pesticides (cyanide based) were discovered in a former psychiatric ward in April 1990 by a building contractor. Other pesticides and materials such as waste roofing tar and oil have since been found; some have been removed by the Army Corps of Engineers (COE).

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Valley Forge Army Hospital Final Preliminary Assessment Report

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Additional public concern over the site began in March 1990, when an area resident informed the Schuylkill Board of Supervisors that Hodgkins Disease had been diagnosed in five residents (now up to six residents) living within one mile of each other and nearby the former Army hospital. Area residents are concerned that the Hodgkins cases may be linked to the contamination at the site. The local township, the Pennsylvania Department of Environmental Resources, EPA, COE, the Chester County Health Department, and the press have become actively involved with the site as the result of the contamination and cancer findings.

An estimated 28,000 people live within a 3-mile radius of the subject site. Four public water distribution companies provide water obtained from groundwater and surface water sources to most of the population residing within the study area. Other residents located in non-serviced areas are assumed to utilize private home wells. The nearest home well to the site is located approximately (b) (9) [REDACTED] Approximately 7,600 people utilize private home wells for drinking water.

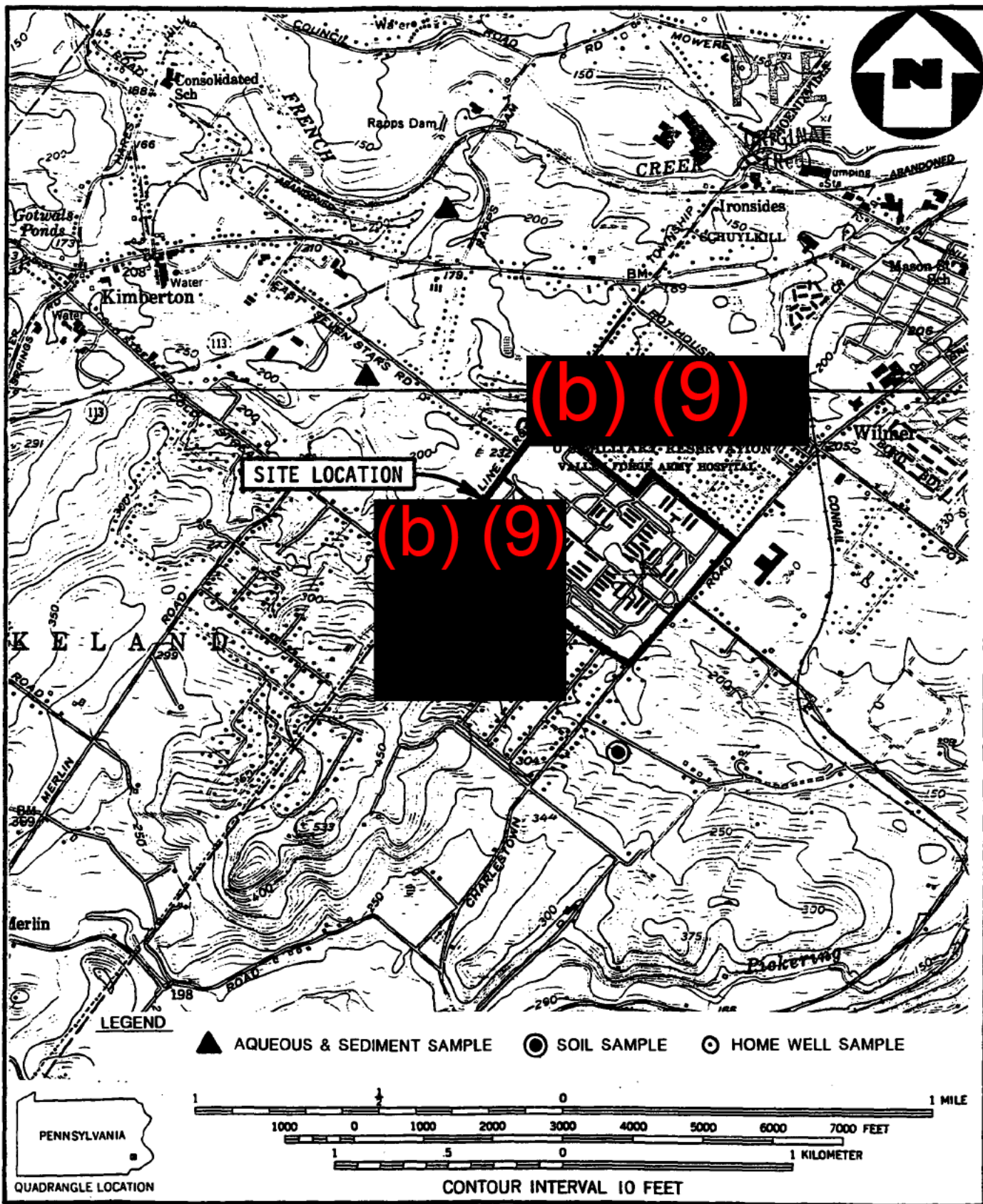
NUS FIT 3 visited the site on May 29, 1990 to perform a preliminary assessment. Interviews with site owners and other involved parties and a site walk were performed during the visit.

If you have any further questions, please contact me.

Not Responsive Due to Revised Scope

Not Responsive due to Revised Scope

Attachments

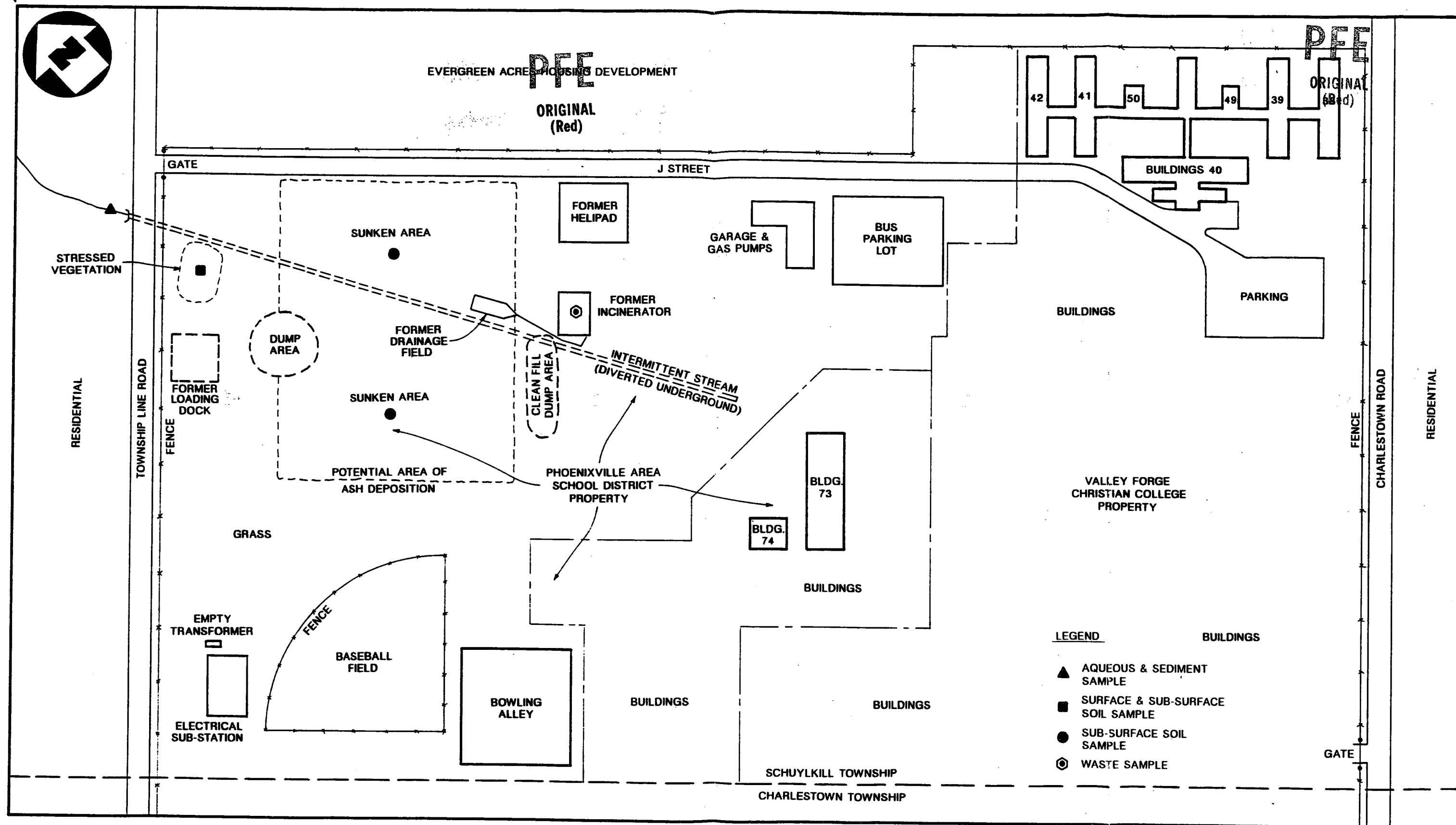


SOURCE: (7.5 MINUTE SERIES) U.S.G.S. PHOENIXVILLE & MALVERN, PA QUADS.

PROPOSED OFF-SITE SAMPLE LOCATION MAP
VALLEY FORGE ARMY HOSPITAL, PHOENIXVILLE, PA

SCALE 1: 24000





NORTH PROPOSED SAMPLE LOCATION MAP
VALLEY FORGE ARMY HOSPITAL, PHOENIXVILLE, PA
 (NO SCALE)

CONFIDENTIAL

PROJECTED HRS SCORE

DATE: 7/30/90

BASED ON: ☒ PA ☐ RECON. ☐ SI AND ASSUMPTIONS

PFE

FOR VALLEY FORGE ARMY HOSPITAL

ORIGINAL

TDD F3-9005-33 EPA NO. PA-2718

SOURCE/ASSUMPT (Red)

(IDENTIFY SOURCE OF DOCUMENTATION, PROFESSIONAL JUDGMENT OR NOTE AS "SAME AS PRESCORE")

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0	45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 Route Characteristics	0 1 2 3					3.2
Depth to Aquifer of Concern	0 1 2 3	2	6	8		
Net Precipitation	0 1 2 3	1	2	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	2	3		
Physical State	0 1 2 3	1	2	3		
Total Route Characteristics Score			12	15		
3 Containment	0 1 2 3	1	3	3		3.3
4 Waste Characteristics	0 3 6 9 12 15 18					3.4
Toxicity/Persistence	0 1 2 3 4 5 6 7 8	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
5 Targets	0 1 2 3					3.5
Ground Water Use	0 4 8 12 16 20 24	3	9	9		
Distance to Nearest Well/Population Served	0 4 8 12 16 20 24	1	35	40		
Total Targets Score			44	49		
line 1 is 45, multiply 1 x 4 x 5			30096	57.330		
line 1 is 0, multiply 2 x 3 x 4 x 5						
7 Divide line 6 by 57.330 and multiply by 100			S _{gw} = 52.50			

IF SCORED: ☐ PRESCORE ☒ SEE BELOW

220 feet; USGS Groundwater Resources of Chester Co. PA. Water Res. Invest. 77-67, 9/77.

8.6" - HRS User's Manual, Aug. 1982.

10⁻³ - 10⁻⁵ hydraulic conductivity - USDA, SCS, Soil Survey of Chester & Delaware Counties, PA 1963.

ash from burned medical wastes, Ryan, Theodore, Schuylkill Township, with NUS FIT 3. Telecon. 5/2/90. Not Responsive Due to Revised Scope

unlined landfill - see above reference

Elevated Pb levels in on-site soils. Laboratory results from Huttn Architectural Services, Inc.'s site investigation of VF Army Hospital. 12/89.

default value

Private homewells for drinking, no hookup available. NUS FIT 3 preliminary assessment, site visit. TDD F3-9005-33. May 29, 1990.

nearest well approx. (b) (9) land filled area, about 8000 people utilize groundwater. NUS FIT 3. Preliminary Assessment, site visit. F3-9005-33. 5/29/90. USGS topographic

NOTES Map, Malvern, PA quad. 1955, photorevised 1983.

OBSERVED RELEASE

CONT.	D.L.	WELL #	WELL #	WELL #	WELL #

SOURCE: _____

Not Responsive Due to Revised Scope

CONFIDENTIAL

PROJECTED HRS SCORE

DATE: 7/30/90

BASED ON: ☒ PA ☐ RECON ☐ SI AND ASSUMPTIONS

FOR VALLEY FORGE ARMY HOSPITAL

TDD F3-9005-33 EPA NO. PA-2718

SOURCE/ASSUMPTIONS

PFE

ORIGINAL (Red)

(IDENTIFY SOURCE OF DOCUMENTATION, PROFESSIONAL JUDGMENT OR NOTE AS "SAME AS PRESORE")

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0	45	1	0	45
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					
Facility Slope and Intervening Terrain	0 1 2 3	1	1	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	4	6	
Physical State	0 1 2 3	1	2	3	
Total Route Characteristics Score			9	15	
Contaminant	0 1 2 3	1	3	3	
4 Waste Characteristics					
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
3 Targets					
Surface Water Use	0 1 2 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 3	2	1	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			7	55	
Line 1 is 45, multiply 1 x 4 x 5			3591	54 350	
Line 1 is 0, multiply 2 x 3 x 4 x 5					
7 Divide line 5 by 54,350 and multiply by 100			S _{SW} = 5.58		

IF SCORED: ☐ PRESORE ☒ SEE BELOW

3-5% slope - NUS FIT 3, Preliminary Assessment, site visit. F3-9005-33. May 29, 1990.

2.6" HRS Users Manual. Aug. 1982.

nearly 1 stream mile to closest perennial stream NUS FIT 3. Preliminary Assessment, site visit. F3-9005-33 May 29, 1990.

ash from burned medical wastes, Ryan, Theodore Schuyler Kill Twp, with NUS FIT 3. telecon. 5/2/90

unlined landfill - see above reference.

Elevated Pb levels in on-site soils. Lab results from Huth Architectural Services, Inc's site investigation of VF Army Hospital 12/89.

default value

surface waters downstream used for fishing. PADEP water Quality Stds. 10/8/79

Wetlands (> 5 Ac) located 1.6 miles SW of site. National Wetlands Inventory, Malvern, PA quadrangle topographic map. 5/81.

No SW intakes within 3 miles downstream

NOTES

A perennial stream and several ponds are located near the site's western corner. Surface water runoff from the landfilled area and contaminated soil zone is not expected to enter these waters.

OBSERVED RELEASE

CONT.	DL.	SAMPLE #	SAMPLE #	SAMPLE #	SAMPLE #

SOURCE:

Not Responsive Due to Revised Scope

CONFIDENTIAL

PROJECTED HRS SCORE

DATE: 7/30/90

BASED ON: ☒ PA ☐ RECON. ☐ SI AND ASSUMPTIONS

FOR VALLEY FORGE ARMY HOSPITAL

TDD F3-9005-33

EPA NO. PA-2718

PFE

ORIGINAL
(Red)

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Rel. (Section)	
1 Observed Release	0	45	1	0	45	5.1
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the $S_a = 0$. Enter on line 3 . If line 1 is 45, then proceed to line 2 .						
2 Waste Characteristics						5.2
Reactivity and Incompatibility	0 1 2 3		1		3	
Toxicity	0 1 2 3		3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score					20	
3 Targets						5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30		1		30	
Distance to Sensitive Environment	0 1 2 3		2		6	
Land Use	0 1 2 3		1		3	
Total Targets Score					39	
Multiply 1 x 2 x 3					35,100	
3 Divide line 4 by 35,100 and multiply by 100 $S_a = 0$ IF >0 SEE PRESORE SHEETS FOR DOCUMENTATION.						

NO POTENTIAL FOR RELEASE IS EVALUATED.

TRANSFER AIR SCORE FROM PRESORE. IF

AN AIR RELEASE IS LIKELY, COMMENT BELOW:

NOTES:

Not Responsive Due to Revised Scope

BASED ON: ☒ PA ☐ RECON. ☐ SI AND ASSUMPTIONS

FOR VALLEY FORGE ARMY HOSPITAL

TDD F3-9005-33

EPA NO. PA-2718

PFE

	s	ORIGINAL (Red)
Groundwater Route Score (S_{gw})	52.50	2756.25
Surface Water Route Score (S_{sw})	5.58	31.14
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2787.39
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		52.80
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		30.52

NOTES:

(POTENTIAL FOR AIR RELEASE) The potential for an air release is low. Soil samples of the landfilled area revealed elevated levels of inorganics only.

HRS-2 CONCERNS:

AREA G.W. SUPPLIES CONTAMINATED ? unknown

S.W. INTAKES WITHIN 15 S.M. ? yes - PA American waterco. has a surface intake approx. 15 ^{Stream} miles downstream on the Schuylkill R., and Phila. Suburban water has an intake approx. 6 stream miles downstream on the Schuylkill R. also
RECREATION/SENSITIVE ENVIRONMENTS WITHIN 15 S.M. ? yes - wetlands are located 1.6 miles southwest (>5 Ac in size)

CONTAMINATED SURFACE SOILS ACCESSIBLE ? yes - they are accessible to the owners of the property and their employees.

Not Responsive Due to Revised Scope